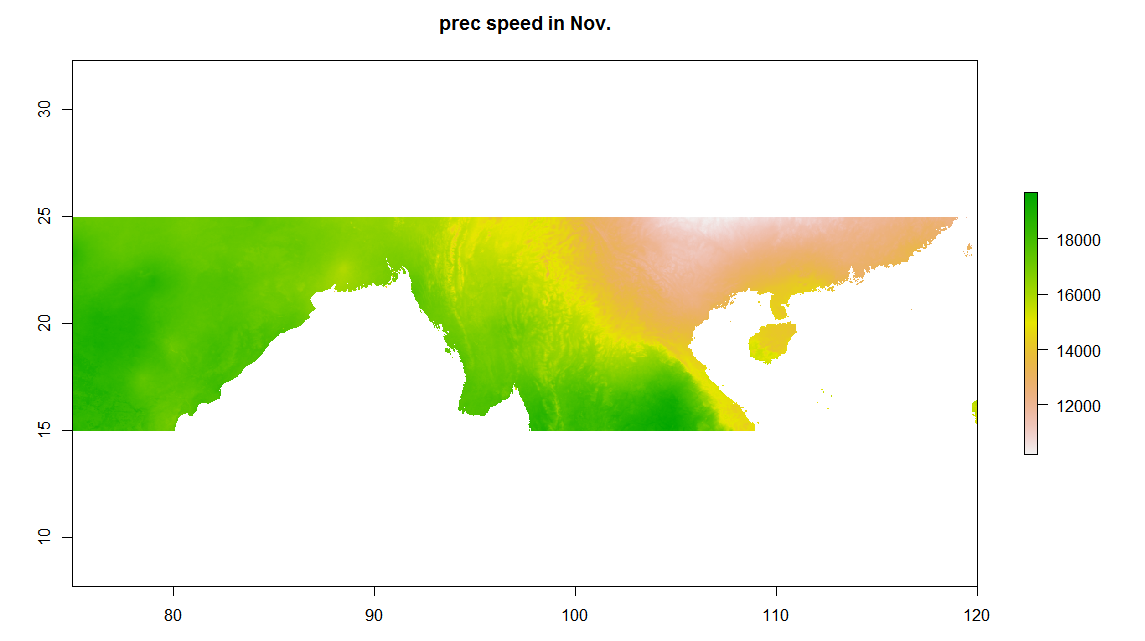
# Assignment 05

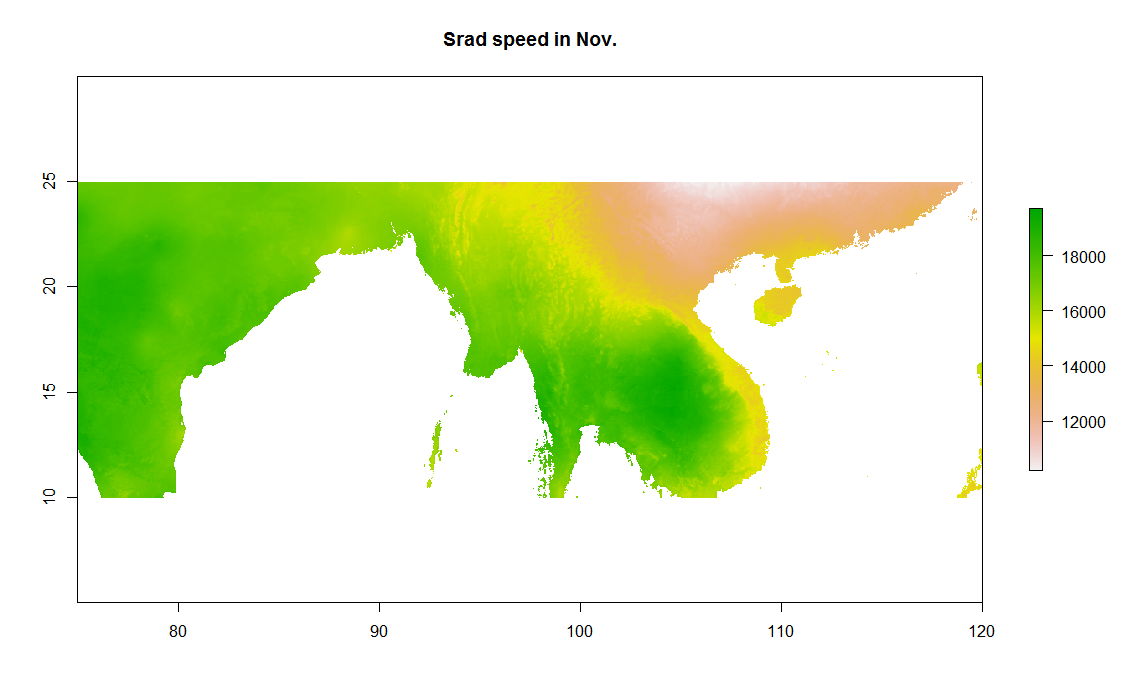
## 1. Potential Renewable Energy Spots in China

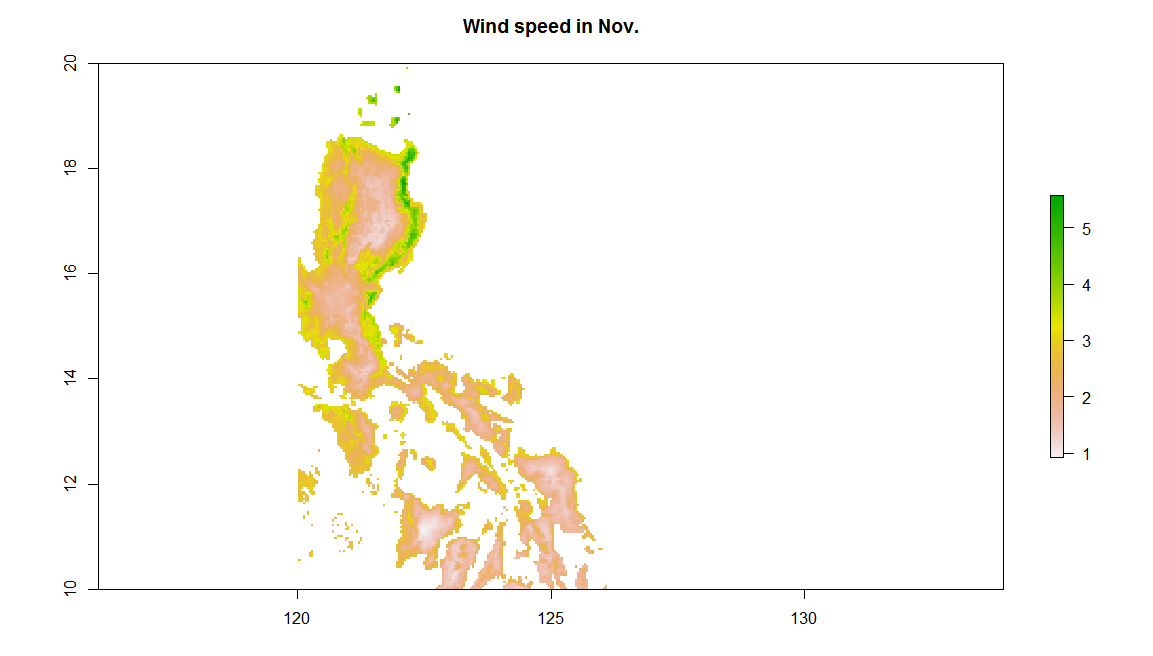
1.1 [5 points] Download the following data sets and load them in R:



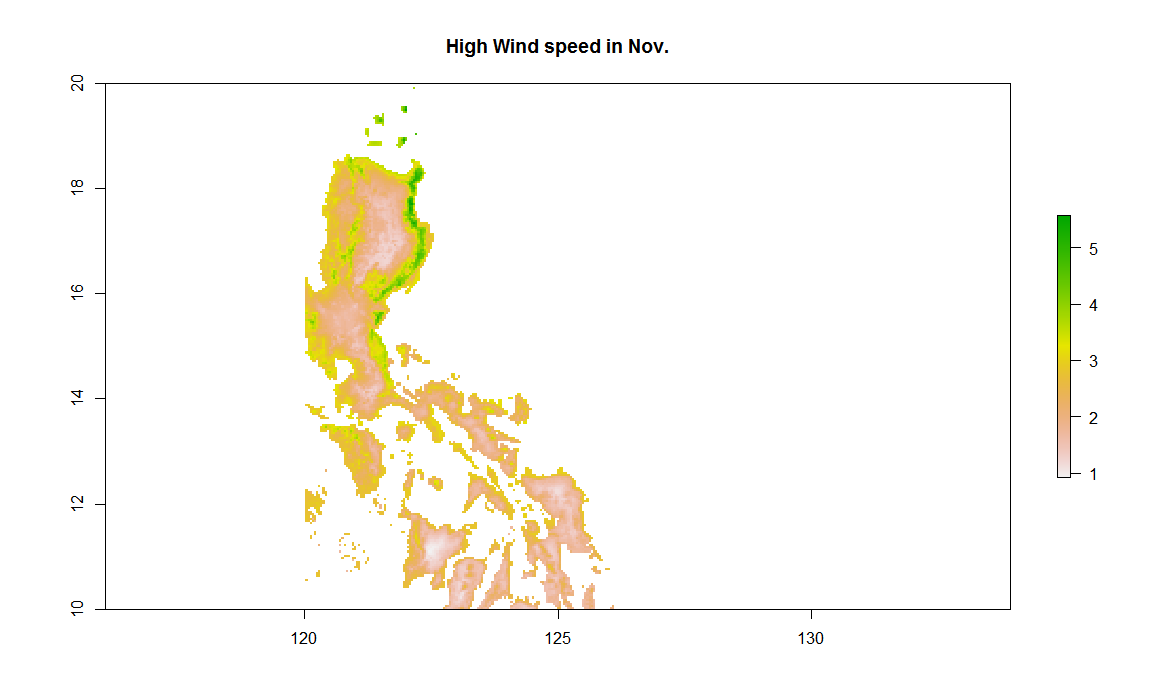
1.2 [10 points] Plot the above data sets over China. You should make three plots, each should contain its own legend.







1.3 [5 points] First, let’s search for regions with relatively high wind speed to build wind farms. Define a reasonable wind speed as the threshold, and describe your favorite spots.



**Spot info：**

class : RasterLayer

dimensions : 240, 240, 57600 (nrow, ncol, ncell)

resolution : 0.04166667, 0.04166667 (x, y)

extent : 120, 130, 10, 20 (xmin, xmax, ymin, ymax)

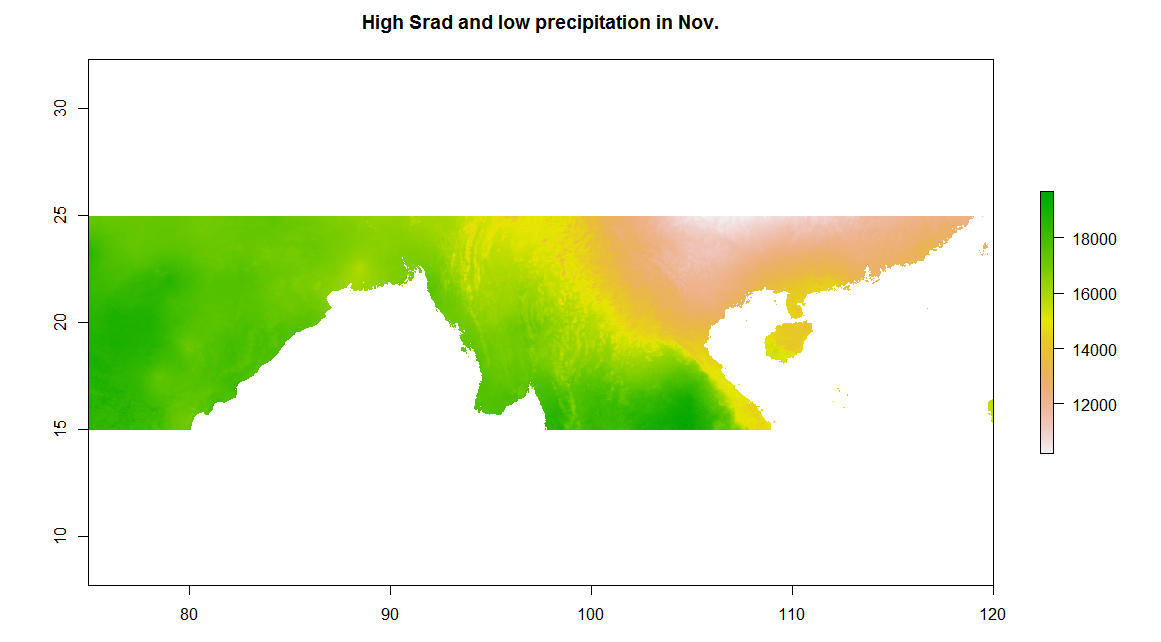
crs : +proj=longlat +datum=WGS84 +no\_defs

source : memory

names : wc2.1\_2.5m\_wind\_11

values : 0.916, 5.58 (min, max)

1.4 [5 points] Second, let’s search for regions with relatively high solar radiation and low precipitation as potential locations of photovoltaics (PV) farms. Describe your favorite spots of PV farms.



**Spot info：**

class : RasterLayer

dimensions : 240, 1080, 259200 (nrow, ncol, ncell)

resolution : 0.04166667, 0.04166667 (x, y)

extent : 75, 120, 15, 25 (xmin, xmax, ymin, ymax)

crs : +proj=longlat +datum=WGS84 +no\_defs

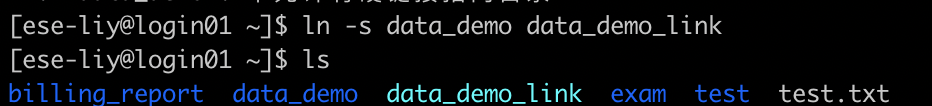
source : memory

names : wc2.1\_2.5m\_srad\_11

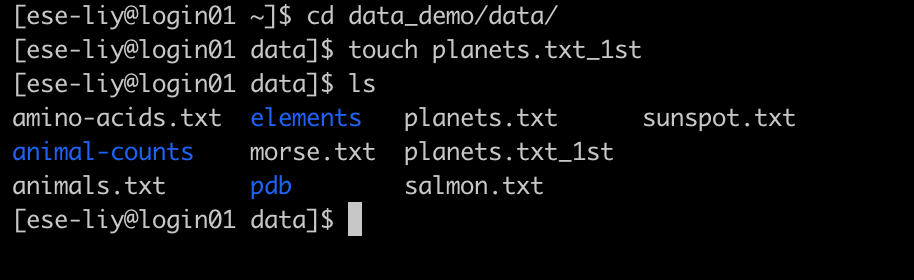
values : 10198, 19688 (min, max)

## 2. More Linux Commands

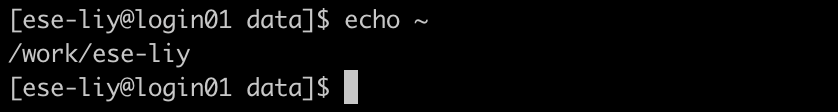
2.1 [2 points] Make a link called data\_demo\_link to data\_demo folder using ln



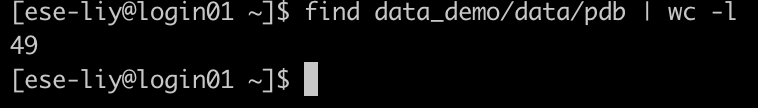
2.2 [2 points] Go to data\_demo/data/, make an empty file planets.txt\_1st with touch.



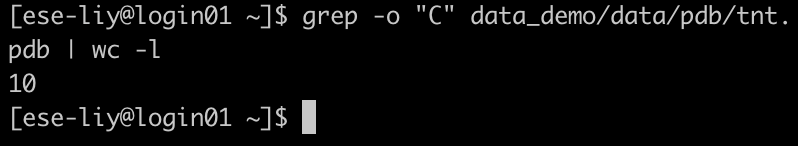
2.3 [2 points] Print your home directory using echo.



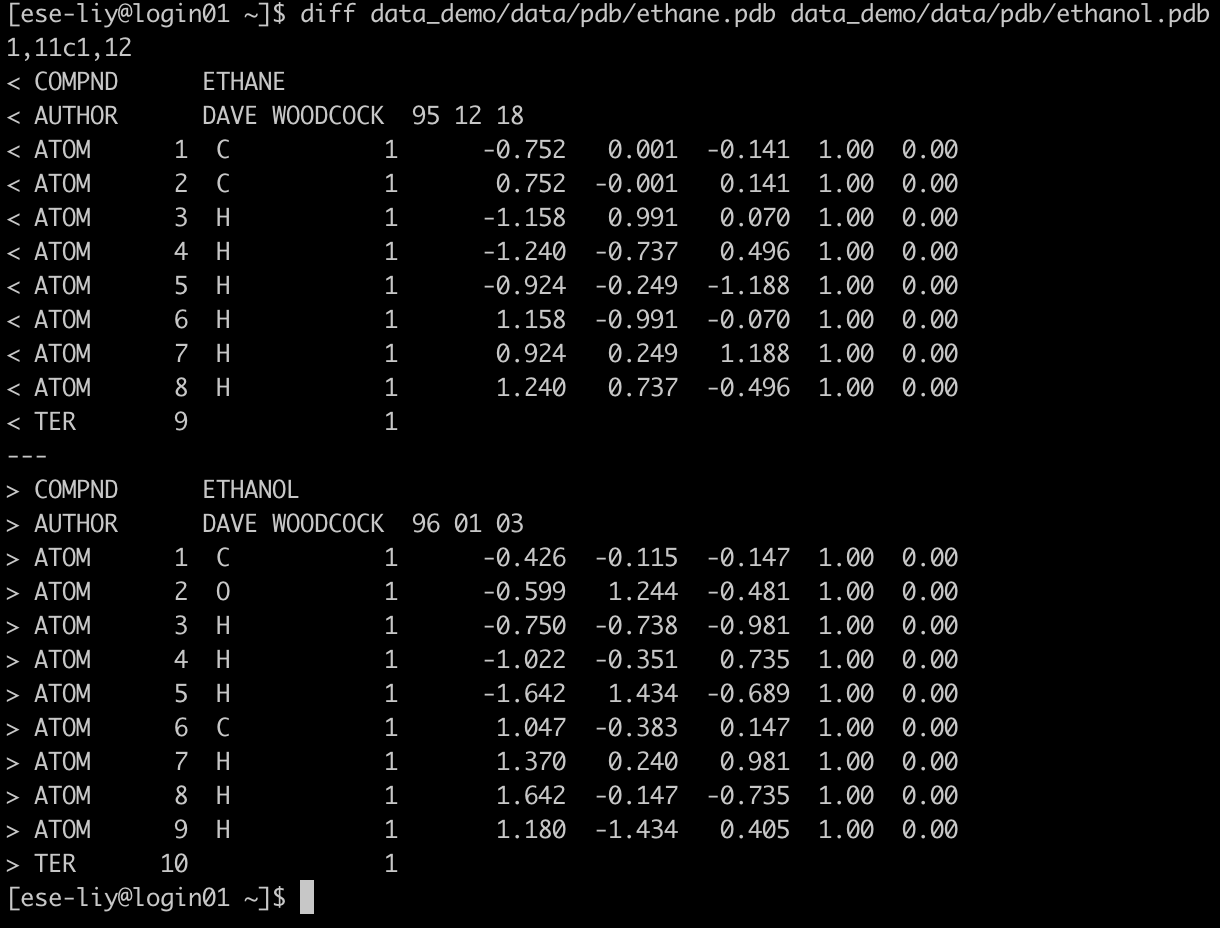
2.4 [3 points] Find how many files in data\_demo/data/pdb/ using find.



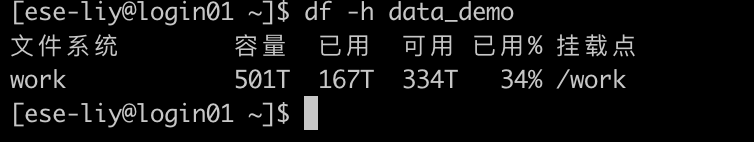
2.5 [3 points] Count how many C character appears in data\_demo/data/pdb/tnt.pdb with grep.



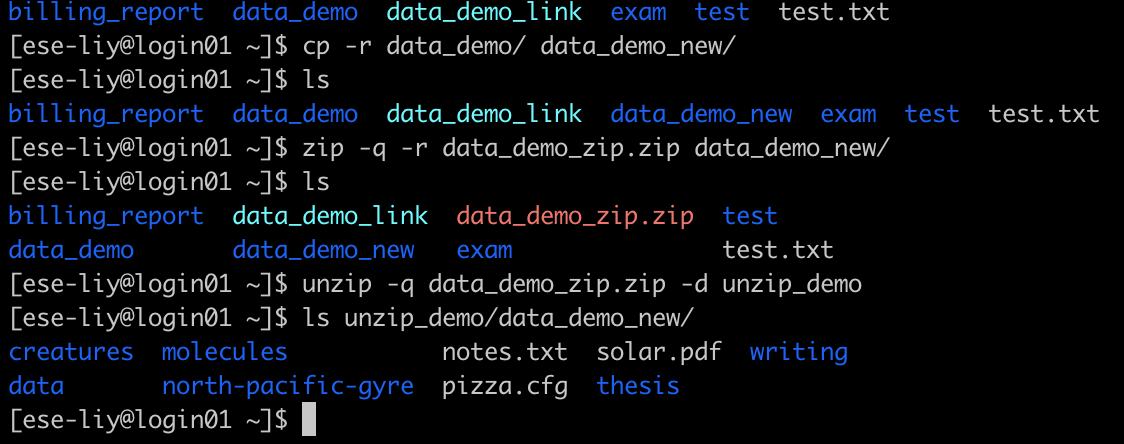
2.6 [2 points] Compare data\_demo/data/pdb/ethane.pdb and data\_demo/data/pdb/ethanol.pdb with diff



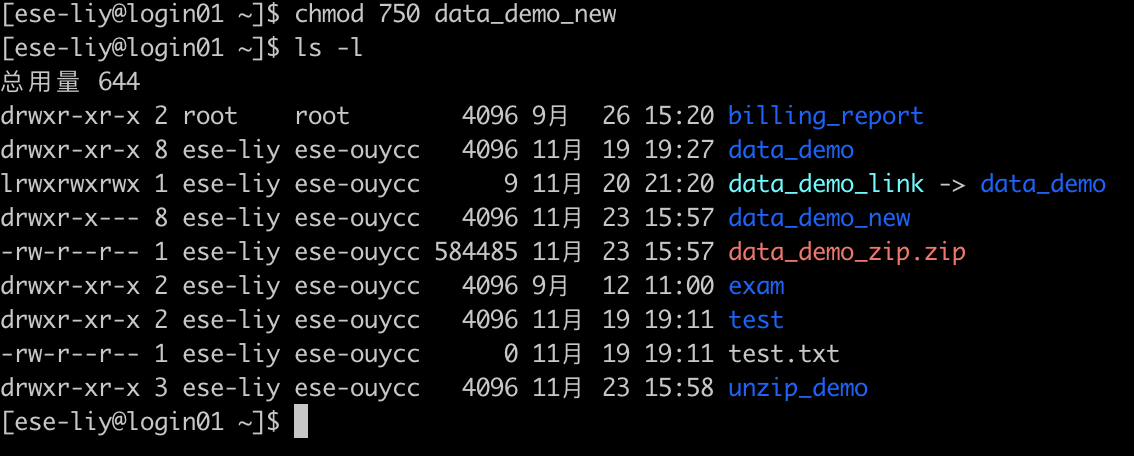
2.7 [2 points] Check the total file size of the data\_demo folder using df.



2.8 [3 points] Copy the data\_demo folder to data\_demo\_new, compress it using zip, and decompress the .zip file with unzip.



2.9 [3 points] Change the file permissions flags on data\_demo\_new to drwxr-x--- using chmod.



2.10 [3 points] Print the last 10 commands you made using history.

